Natural Sciences

Description of the Examination

The CLEP General Examination in Natural Sciences covers a wide range of topics frequently taught in introductory courses surveying both biological and physical sciences at the freshman or sophomore level. Such courses generally satisfy distribution or general education requirements. The Natural Sciences exam is not intended for those specializing in science; it is intended to test the understanding of scientific concepts that an adult with a liberal arts education should have. The exam does not stress the retention of factual details; rather, it emphasizes the knowledge and application of the basic principles and concepts of science, the comprehension of scientific information, and the understanding of issues of science in contemporary society.

The primary objective of the exam is to give candidates the opportunity to demonstrate a level of knowledge and understanding expected of college students meeting a distribution or general education requirement in the natural sciences. Colleges may grant up to six semester hours (or the equivalent) of credit toward fulfillment of such a requirement, for satisfactory scores on the exam. Some may grant specific course credit, on the basis of the total score for a two-semester survey course covering both biological and physical sciences.

The test contains 120 multiple-choice questions to be answered in two separately timed 45-minute sections, one covering biological science, the other physical science.

Knowledge and Skills Required

Questions on the exam require candidates to demonstrate one or more of the following abilities.

- Knowledge of fundamental facts, concepts, and principles (about 40 percent of the exam).
- Interpretation and comprehension of information (about 20 percent of the exam), presented in the form of graphs, diagrams, tables, equations, or verbal passages.
- Qualitative and quantitative application of scientific principles (about 40 percent of the exam), including applications based on material presented in the form of graphs, diagrams, tables, equations, or verbal passages. More emphasis is given to qualitative than quantitative applications.

The subject matter of the General Examination in Natural Sciences is drawn from the following topics.

Approximate Percent of Examination

Biological Science (50%)

10%	Origin and evolution of life, classification of organisms
10%	Cell organization, cell division, chemical nature of the gene, bioenergetics,

	biosynthesis
20%	Structure, function, and development in organisms; patterns of heredity
10%	Concepts of population biology with emphasis on ecology

Physical Science (50%)

7%	Atomic and nuclear structure and properties, elementary particles, nuclear reactions
10%	Chemical elements, compounds and reactions; molecular structure and bonding
12%	Heat, thermodynamics, and states of matter; classical mechanics; relativity
4%	Electricity and magnetism, waves, light and sound
7%	The universe: galaxies, stars, the solar system
10%	The Earth: atmosphere, hydrosphere, structure, properties, surface features, geological processes, history

The exam includes some questions that are interdisciplinary and cannot be classified in one of the above categories. Some of the questions on the exam cover topics that overlap with those listed above, drawing on areas such as history and philosophy of science, scientific methods, science applications and technology, and the relationship of science to contemporary problems of society, such as environmental pollution and depletion of energy supply. Some questions on the exam are laboratory oriented.

Study Resources

Visit a local college bookstore to determine which textbooks are used by the college for natural science courses. To prepare for the Natural Sciences exam, students are advised to study from more than one textbook to cover all the subject matter, selecting at least one biological science and one physical science textbook. When choosing a textbook, students should check the table of contents against the "Knowledge and Skills Required" section.

If students maintain an interest in scientific issues, read science articles in newspapers and magazines, watch public television programs such as "Nova," or work in fields that require a knowledge of certain areas of science such as nursing and laboratory work, they will probably be knowledgeable about many of the topics included on the Natural Sciences exam. The Internet is another resource students could explore.